

W5YI

America's Oldest Ham Radio Newsletter REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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Amateur Station Vanity Call Sign Handling Under ULS

The FCC has just issued a new **1999 Fee Filing Guide**. Congress has required that the FCC collect \$172.5 million through Regulatory Fees for Fiscal Year (FY) 1999. This amount is about \$10 million (or 6%) more than last year. There are actually two fees collected by the FCC.

Regulatory fees (authorized by Section 9 of the Communications Act) are determined on a fiscal year basis to assist the FCC in recovering the costs associated Government regulation, user services, enforcement and international activities. These funds are returned to the FCC in the form of appropriations to cover their operating budget. Amateur station Vanity call sign fees are an example of a regulatory fee.

Application fees – also called a processing fees – (authorized by Section 8 of the Communications Act) are paid by applicants to reimburse the Government for the cost of processing their license. Amateurs radio operators are exempt from the payment of application fees.

Here is what the updated Fee Filing Guide and the "Regulatory Fees for FY-1999" *Report and Order* says about Amateur Radio.

AMATEUR RADIO SERVICE:

- The Amateur Radio Service was converted to the Universal Licensing System (ULS) on August 16, 1999. For information on ULS electronic filing, visit the Internet at: <http://www.fcc.gov/wtb/uls>.

There are two ways to request a Vanity call sign, manual (paper) and electronic filing.

The FCC estimates that there will be a total of 6,800 Vanity call signs requested in FY-1999. Amateurs will receive a new ten year license term when their Vanity call sign is assigned. These instructions cover manually filed vanity call sign requests using paper document applications.

MANUAL (PAPER DOCUMENT) FILING OF VANITY CALL SIGN REQUESTS:

All other amateur licensees are exempt from payment of regulatory fees. Use the following forms to manually file for a vanity call sign.

- **FCC Form 605** – "Quick-Form Application for Authorization in the Ship, Aircraft, Amateur, Restricted and Commercial Operator, and General Mobile Radio Services" – Current edition date is July 1999.

[You enter the application purpose and applicant information on the form.]

- **Schedule D to Form 605** – "Schedule for Additional Data in the Amateur Radio Service" – Current edition date is July 1999.

[You enter your Vanity call sign preference on this form.]

- **FCC Form 159** – "Fee Remittance Advice" – Current edition is July 1997. This form must

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accompany any payment of a fee paid to the FCC. WordPerfect 6.0 and Adobe Acrobat Reader ".pdf" copies of these forms may be downloaded from the Web at: <<http://www.fcc.gov/formpage.html>> or via FTP from: <<ftp://ftp.fcc.gov/pub/Forms/>>.

You may also contact the FCC's Fax-On-Demand system to obtain a copy of these forms by calling (202) 418-0177 from the handset of your fax machine. Request the index to find out the document number of the form you need.

The FCC's Forms Distribution Center at toll free at 1(800) 418-FORM (3676) can mail you copies of forms. You may be required to leave a message, including your name, mailing address, phone number and the form number and quantity of the form(s) you require. The Forms Distribution Center will mail your request within 3 days.

- **Fee Type Code - "WAVR"**

[These letters must be entered in Section "C" of the Form 159, *Remittance Advice*.]

- **Regulatory Fee** - \$1.40 annual regulatory fee per Vanity call sign or \$14.00 for a ten-year term license payable in advance. The new fee is effective September 14, 1999.

[Do not send cash. Payment of fees must be made by a single remittance, check, bank draft, money order or credit card.]

- **Refunds** - Requests for refund of a fee paid to the FCC must be made in writing to:

Federal Communications Commission
1270 Fairfield Road
Gettysburg, PA 17325-7245.

To comply with the *Debt Collection Improvement Act of 1996*, the Commission is required to provide your Taxpayer Identification Number to the U.S. Treasury upon generating a request for refund.

[Radioamateurs are eligible for a refund when they do not receive one of their requested Vanity call signs. The refund process usually takes about four (4) weeks. Once a refund request has been approved, it is forwarded to the U.S. Treasury in San Francisco, California, where a check is issued.]

SEND YOUR FEEABLE VANITY CALL SIGN APPLICATION PACKAGE WITH PAYMENT TO:

Federal Communications Commission
Wireless Bureau Applications
P.O. Box 358130
Pittsburgh, PA 15251-5130

COURIER OR HAND DELIVERY OF APPLICATIONS:

If you wish to hand carry or courier your feeable application to Pittsburgh, it should be enclosed in a sealed

envelope with the above Post Office Box, clearly marked on the outside and delivered to the FCC's lockbox agent at the following address:

Federal Communications Commission
c/o Mellon Bank
525 William Penn Way
27th Floor Room 153-2713
Pittsburgh, PA 15259
Attn: Wholesale Lockbox Shift Supervisor

FEE EXEMPT:

There is no fee required for applications filed in the Amateur Radio Service other than the regulatory fee for an Amateur Vanity License. The FCC does not expect renewal of Amateur Vanity until approximately year 2006.

SEND NON-FEEABLE APPLICATION PACKAGES TO:

These include paper-filed renewals, name, address and (systematically changed) call sign changes. Use FCC Form 605. Include Schedule "D" if you want to sequentially change your call sign.

Federal Communications Commission
1270 Fairfield Road
Gettysburg, PA 17325-7245

[The Volunteer-Examiner Coordinators (VECs) are authorized to electronically file Amateur Service renewals and administrative updates (i.e.: name, address and sequential call sign changes and may charge a fee for this service. The *ULS Report and Order* permits the VECs to develop their own electronic filing forms. Use NCVEC Form 605 if you are sending your renewal to a VEC for handling. This form is available online from the ARRL at <<http://www.arrl.org/arrlvec/ncvec605.pdf>> and W5YI websites at <<http://www.w5yi.org/ncvec605.pdf>>. This form is easier to use since it resembles the previous FCC Form 610. This is an internal VEC form and may not be sent to the FCC.]

ELECTRONIC FILING OF VANITY CALL SIGN REQUESTS:

Electronic filing of Vanity call sign via ULS was to have been operational by the beginning of September 1999. But it has not worked out that way. There have been several problems. And as of this writing, electronic filing of Vanity call signs and the online submission of credit card information is not yet operating properly. As a result no Vanity call signs have been issued since the first of August. But here are the instructions on how to:

ELECTRONICALLY FILING FOR A VANITY CALL SIGN

1. Your address **MUST** be current with the FCC. Address changes must be submitted to the FCC before you can file your vanity application.
2. All amateurs must register their callsign with the FCC and

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submit their Taxpayer Identification Number (TIN). For a radio-amateur, the TIN is their Social Security Number. You must also self-assign a password, and secondary identifier password to be associated with your station call sign. You only have to register once.

3. To register your TIN, go to the Wireless Telecommunications Bureau's ULS Internet home page located at: <<http://www.fcc.gov/wtb/uls>> Simply click on the 'TIN/Call Sign Registration' button and provide the information as prompted. Be sure to enter your call sign when you register. Some individuals have registered but failed to enter their call sign in the process.

4. Manual TIN registration requires submission of FCC Form 606 (TIN Registration Form) which can be obtained from the Internet at <<http://www.fcc.gov/formpage.html>>, or by calling the FCC's Form Distribution Center at 1-800-418-FORM (3676).

5. If you registered your TIN manually and wish to file applications electronically, you must call the ULS Technical Support at (202) 414-1250 to obtain a password. If you encounter problems registering your TIN electronically, also contact Technical Support.

6. You may not have more than one application on file with the FCC at any one time. For example: do not file for a vanity call sign and then upgrade your license before you get your call sign.

7. Assuming that you are running Windows 95/98, the first requirement to electronically file any application on-line is that you must be using a Netscape browser (Version 4.5 and preferably Version 4.6 with 128-bit encryption) or you will not be able to access the secure pages on the ULS filing site. Microsoft web browsers will not work. The Netscape browser can be downloaded from the Internet or purchased. The FCC told us that it could be six months or more before Microsoft browsers could be used to file applications on-line.

8. You must configure your dial-up network access to reach the FCC network at Tel. 1-800-844-2784. In the Net site field of the web browser screen, type in the following URL address: <<http://www.fcc.gov/wtbwww05.fcc.gov>>.

9. Once on-line, enter your Taxpayer Identification Number (TIN or Social Security Number). Do not enter punctuation (i.e.: dashes) when entering your TIN. Next enter your name, address, telephone, fax and e-mail address.

10. Specify a password of at least 5 characters (letters or numbers) that you will use in conjunction with your TIN. For security purposes, you will be required to correctly enter your TIN and password prior to accessing the ULS for filing applications online or updating your registration information. If you forget your password, the FCC support staff will ask for your personal identifier to verify your identity. Passwords are case sensitive.

11. After you have completed entering your registration information and have read the Notice to Individuals, click on the Submit button to submit your registration. If you failed to supply any required registration information, a screen will appear identifying the errors. Click on the Return button to re-access the registration screen and correct the errors.

12. Once you have registered, you may file applications elec-

tronically. You will have to enter your TIN and password to access the ULS site.

13. To apply for a Vanity call sign, complete the various Application Information screens. Once you have selected up to 25 Vanity call sign choices, click on "submit" to file the application. You will then get a confirmation number screen.

14. Select "print preview" to bring up a new window with the actual application form and print this page from the browser or your records.

15. Close that window and select "159 form" at the bottom of the page. A new window will open and the "Interactive Form 159" displays. You must enter your name in block #27 as your "electronic signature." Then click on "Printable Form 159." This displays the completed 159 form that must be mailed to the FCC within 10 days of submitting the application.

16. Print this form from the browser. Then write in your credit card number or attach your \$14.00 check/money order, sign and date then mail to:

Federal Communications Commission
P.O. Box 358994
Pittsburgh, PA 15251-5994

17. If for any reason, you cannot print the Form 159, you can complete a paper Form 159 based on the information provided on the Application Confirmation screen. Be sure to put your confirmation number on the Form 159.

18. Applicants must remit the Form 159 and payment within 10 calendar days of submitting the application ...otherwise the application is dismissed.

TECHNICAL SUPPORT:

For general information regarding the Universal Licensing System (ULS), including answers to frequently asked questions regarding submitting applications, finding the status of pending applications, and searching the ULS database, go to the ULS home page on the World Wide Web at <<http://www.fcc.gov/wtb/uls>>.

Those having specific questions not addressed on the web page may contact Commission staff via phone or e-mail. The ULS Technical Support Hotline is available at telephone: (202) 414-1250. The hotline is available Monday through Friday, from 8:00 a.m. to 6:00 p.m. Eastern Time.

Contact the Technical Support Hotline about questions concerning computer access to ULS and TIN registration. In order to provide better service to ULS users and ensure the security of the electronic filing system, all calls to the hotline are recorded. Comments and questions on ULS may also be e-mailed to: ulscomm@fcc.gov.

For answers to questions concerning applications, what information is being requested on a ULS form or schedule, or any other ULS-related licensing matter, telephone: 1-888-CALL-FCC (225-5322), choose option #2. ULS Licensing Support is available Monday through Friday, from 8:00 a.m. to 5:30 p.m. Eastern Time.

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AMATEUR RADIO STATION CALL SIGNS

...sequentially issued as of the first of October 1999:

Radio District	Group A Extra	Group B Advanced	Group C Tech/Gen.	Group D Novice
0 (*)	AB0IZ	KI0QN	(***)	KC0CNZ
1 (*)	AA1UT	KE1LW	(***)	KB1BJP
2 (*)	AB2GM	KG2QY	(***)	KC2FNV
3 (*)	AA3SU	KF3DL	(***)	KB3BGE
4 (*)	AF4PY	KV4CF	(***)	KG4ETZ
5 (*)	AC5TF	KM5WD	(***)	KD5IIM
6 (*)	AD6JG	KR6CR	(***)	KF6YVQ
7 (*)	AC7BO	KK7UL	(***)	KD7GPQ
8 (*)	AB8EL	KI8JD	(***)	KC8NDX
9 (*)	AA9XJ	KG9QH	(***)	KB9VGS
N. Mariana	NH0P	AH0BB	KH0IF	WH0ABM
Guam	(**)	AH2DL	KH2UN	WH2AQA
Hawaii	WH7E	AH6PW	KH7VY	WH6DFT
Am. Samoa	AH8R	AH8AH	KH8DQ	WH8ABF
Alaska	AL0Q	AL7RM	KL0UJ	WL7CVD
Virgin Isl.	(**)	KP2CP	NP2KQ	WP2AIK
Puerto Rico	WP3F	KP3BL	WP3DZ	WP4NOQ

* = All 1-by-2 & 2-by-1 call signs have been assigned.
 ** = All 2-by-1 call signs have been assigned.

*** = Group "C" (N-by-3) call signs have now run out in all districts. Group "D" calls now being assigned.

Note: New prefix numerals now being assigned in Puerto Rico (KP3/NP3/WP3), Hawaii (AH7/KH7/WH7) and Alaska (AL0/KL0)

[Source: FCC Amateur Service Database, Washington, DC]

The chart below indicates the lack of Amateur Radio growth over the past three years. The Extra Class has increased a little. But all of the other license classes that require Morse proficiency have decreased significantly. The Advanced, General, Tech Plus and Novice Classes have 24,443 less licensees while the Technician Class has grown by 21,816. Practically no radioamateurs begin their Amateur Radio "career" at the Novice level these days. When the No Code license began in February 1991 there were 96,711 Novices. That number is now down to 53,576, a decrease of 45 percent.

Amateur Radio Census by Month, Year and License Class

End of the month census not including Amateurs whose license has expired but are still in the two year grace period.

Month	Extra	Advanced	General	Tech+	Technician	Novice	ARS Total
September-99	75,165	103,544	110,557	133,534	199,363	53,576	675,739
September-98	74,366	103,775	111,989	135,003	188,840	58,705	672,678
September-97	73,794	106,304	115,639	138,339	177,547	65,372	676,995
August-99	75,185	103,607	110,651	133,719	199,032	53,825	676,019
August-98	74,318	103,943	112,255	135,149	188,233	59,021	672,919
August-97	73,804	106,668	116,079	138,900	176,960	65,909	678,320
July-99	75,166	103,723	110,780	133,979	198,467	54,203	676,318
July-98	74,315	104,219	112,623	135,371	187,426	59,448	673,402
July-97	73,749	107,877	116,352	139,238	176,355	66,162	678,733
June-99	75,113	103,705	110,838	134,161	197,681	54,502	676,000
June-98	74,274	104,509	112,977	135,737	186,458	60,125	674,080
June-97	73,737	107,024	116,629	139,608	174,924	66,551	678,473
May-99	75,004	103,645	110,914	134,222	196,598	54,993	675,376
May-98	74,210	104,604	113,061	135,989	185,471	60,638	673,973
April-99	74,981	103,714	111,100	134,587	195,451	55,696	675,529
April-98	74,192	104,927	113,603	136,460	184,328	61,594	675,104
March-99	74,855	103,636	111,162	134,598	194,223	56,245	674,719
March-98	74,066	104,958	113,682	136,580	183,238	62,243	674,767
February-99	74,689	103,532	111,176	134,348	192,958	56,700	673,403
February-98	74,067	105,501	114,341	137,214	181,666	63,239	676,028
January-99	74,622	103,436	111,259	134,421	192,087	57,008	672,833
January-98	74,043	105,795	114,798	137,616	180,665	63,892	676,809
December-98	74,669	103,592	111,513	134,857	191,575	57,617	673,823
December-97	73,949	105,835	114,877	137,688	179,988	64,169	676,506
November-98	74,496	103,526	111,498	134,719	190,510	58,034	672,783
November-97	73,939	106,123	115,280	138,064	179,240	64,868	677,514
October-98	74,509	103,723	111,851	134,882	189,674	58,423	673,062
October-97	73,915	106,207	115,460	138,078	178,335	65,142	677,137

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CUTTING EDGE TECHNOLOGY

■ **The manufacturing industry keeps creating new tools to improve production.** A scanner creates planes (or sheets) of high-intensity laser light in all three dimensions, and a video camera examines the reflected images. The computer sorts through thousands of pieces of data measurement to compile a highly accurate map, complete with dimensions, on the view screen. Accuracy greater than a thousandth of an inch can be obtained, all in less than 30 seconds. It's the creation of Computer Aided Inspection Technologies, Inc., of San Jose, CA.

■ **For very delicate objects such as art treasures, lasers can blast away** paint, rust, and other residue in just a few seconds and leave a clean surface. Laser paint stripping is increasing in popularity.

■ **Most electronic components used in the UHF region and above are expensive,** especially when dealing with test equipment. Even a probe for an oscilloscope with a bandwidth in the gigahertz range can cost hundreds of dollars, and any ham with workbench experience will tell you that one of the most vulnerable areas of a test lead is the connector. To keep them clean and undamaged, probes can be fitted with connector savers. These bear the brunt of mechanical attachment and re-attachment, and don't degrade the signal path.

■ **Semiconductor manufacturers often use microwave energy to heat-cure encapsulants and sealants.** But rather than depend on just one particular frequency, they sweep their industrial "microwave ovens" to cover a wide range of frequencies. Since an object's resonant frequency depends on its length and makeup, a particular unit could reflect the signal back to the source and possibly damage it. By sweeping a range of frequencies in milliseconds, the unit doesn't have time to reflect much non-resonant energy and instead absorbs a great deal of it. The object is therefore heated uniformly because there is little or no SWR.

■ **Some new buildings are being outfitted with fiber-optic cables as they're being constructed.** That may not sound surprising, until you hear that the cables are being used to transmit data on the building itself. Mechanical stress on a fiber-optic cable affects its transmission

characteristics, and a computer looking at the cables can tell if a concrete pillar is being subjected to more than average stress -- such as a foundation shift or an earthquake. This can help maintenance workers learn in advance of a particular shifting of the ground beneath a particular section of the building.

■ **A solid-state welding mask protects welders' eyesight through the use of optical sensors and light polarization.** The Optrel Solarmatic Comfort welding mask automatically adjusts the darkness level of the viewing visor, according to how bright the welding arc is. This same light also charges the mask's internal battery through a solar cell, so there are no dry cells to replace and no power switch is required. Darkness levels automatically change in less than a millisecond.

■ **Manufacturers of microcircuits and optics need to keep their products scrupulously clean during production.** Ultrasonics would be a good way to achieve this, except that the cavitation bubbles created from the high-frequency vibrations in the cleaning fluids sometimes deposit contaminants instead of removing them. This happens often when objects to be cleaned have complex shapes. That's why megasonics is used. Megasonics works on the same principle as ultrasonics, only the frequencies are much higher. The cavitation bubbles created are smaller and therefore do a better job of cleaning.

■ **Want an RF map of your circuit board?** The EMC Precision Scan uses an X-Y antenna probe to scan a printed-circuit board or other device and creates an intensity map of RF fields above the board surface on a computer monitor. Made by Watahan Nohara International, the system lets engineers sweep through a range of frequencies and pinpoint particular RF emitters.

■ **Digital Audio Tape (DAT) machines, while offering superb fidelity,** apparently do not stand up well in the field. Even portable DAT tape decks break down frequently, despite being ostensibly designed with rough handling in mind. They also eat batteries. Many users don't need the high fidelity from the field anyway, and therefore still use standard audio cassettes.

■ **One way to speed up a microprocessor's execution time** is to try to predict what instructions will follow the one it's working on at any given time. Intel's Pentiums II and III can already handle

three or four instructions in advance for each clock cycle, and Intel wants to make that number even higher. That's tough to do, though, on a par with predicting the weather more than four days in advance. There are so many different ways a program can run that it's mathematically impossible to predict exactly what instructions will be needed so far ahead. It's a 500-MHz gamble; if the instruction predicted actually follows, then you've saved a few microseconds. If it isn't the one, the microprocessor must "back up" and execute the instruction the program wants, and that takes a little more time.

■ **Hint: If you don't know what's on the other end, never look into the end of a fiber-optic cable!** It could contain harmful levels of laser light and blind you. Point the cable at the wall or the floor if you're not sure.

■ **"How Lazy Do You Have to Be?" Department.** At least one company makes a motorized microphone stand, remotely controlled to automatically adjust its height to match that of different singers on stage

■ **You may be aware that fuses come in a variety of types, including fast-acting and slow-blow.** Slow-blow fuses are designed to accept large amounts of inrush current for a short time; fast-acting fuses will open when exposed to this "flash" current. Circuit breakers come in similar varieties, too. The "trip curves" available include fast-acting, general, and high-inrush.

EMERGING COMMUNICATIONS

■ **Although bankrupt, the Iridium network of 66 LEO satellites is proving its worth in Taiwan.** In the wake of the Island's worst earthquake, Iridium and Motorola joined forces to provide seventy portable phones, solar panel chargers and free airtime to support Taiwan's military and relief organization search, rescue and coordination efforts in areas devastated by the earthquake.

The satellite-delivered Iridium system was the only communications system to be unaffected by the earthquake which caused a major power and telephone outage. The power outages also affected terrestrial-based cellular stations on the island.

One radio broadcast station - Chinese Radio Networks - has been on site reporting live using a Motorola Iridium phone.

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■ **Lucent Technologies' WaveStar OpticAir system uses multiple frequencies of light waves to carry information.** Instead of piping it through a fiber-optic cable, though, it transmits it all through the air. It's a point-to-point light transmission system, exchanging data between rooftops or stadium levels. It's ideal for broadcast networks who want to set up quickly, don't want cables to break, and need to save money. WaveStar OpticAir's data throughput is far higher than an RF-based system, and doesn't require an FCC license.

■ **FutureTrak International's Space Scanner system allows drivers and boaters to watch Direct Broadcast Satellite (DBS) programs from satellites while they are on the road or on the water.** How? By automatically moving the dish-shaped receiving antenna and keeping it locked onto a particular satellite.

■ **Strong rumors abound about the possible merging of MCI WorldCom and Sprint Corp.** The combined companies would have a market capitalization in excess of \$200 billion and control 32% of the long distance telephone market. MCI and Sprint are the No. 2 and 3 LD company behind market leader AT&T which controls more than 60%. Analysts doubt whether the merger will be able to pass FCC regulatory scrutiny. MCI wants Sprint because of its lucrative nationwide wireless phone operations which it now lacks.

■ **Ever wonder why the telephones use -48 volts DC?** The 48 volts came about as a multiple of the 12-volt batteries used in the central offices of the phone company (which doesn't like to use commercial power). 48 volts was also considered to be the highest multiple of 12 that was still safe, yet worked despite the losses in the cables. The negative polarity of the telephone voltage throws some people; it was put into place simply to preclude galvanic corrosion of the metals in the connectors.

COMPUTER INFO

■ **Some applications require supervision over more than one computer.** Belkin Components makes a device called the OmniView PRO KVM that allows just one keyboard, mouse and monitor to be used on up to eight PCs and their peripherals. What's more, you can daisy-chain

up to 15 more OmniView units to control as many as 128 computers! Software lets the user switch to and control any particular PC on demand.

■ **One way to move data faster to and from a hard drive** is to make its platters spin faster. 10,000-rpm drives are already on the market.

■ **IBM has been awarded over 10,000 patents in this decade alone,** covering practically every aspect of computer hardware and software. It is therefore almost impossible to find any other computer manufacturer or software provider that hasn't infringed on an IBM patent, either accidentally or on purpose. "Big Blue" rakes in about a billion dollars a year from its patents.

■ **Dell Computer Corp. believes that broadband Internet access is the wave of the future.** Toward that end, Dell has announced a new consumer initiative code-named "Dell4me" which has Dell handling all customers PC hardware, software and Internet needs.

Customers buying a new PC will be able to purchase a \$49 cable modem, which will be installed in the factory. Dell will partner with Excite's "@Home Network" to provide the cable service. After delivery, a technician will visit the consumer's home at no-cost to install the cable modem and the service.

The next generation of cable modems will be small enough to fit inside a PC, and Dell plans to pre-install them when they become available. The cable modem service will cost about \$40 per month. Dell already offers pre-installed DSL (digital subscriber line) high speed telephone modems in some of its PCs.

Dell also believes that eventually "...there is going to be one desktop in every room" and that home networking will be essential. They will support the Home Phoneline Networking Alliance standard which delivers low-cost, high-speed networking over existing household phone wires.

Dell will make the installation easy by providing training videos and CD-ROMs and will even install home networks for \$150 if you do not want to do it yourself.

■ **The grey-beige box is out!** IBM is the latest PC maker to join the color craze originally started by Apple Computer, Inc. They now have notebook computers in "Sirius" red, "Andromeda" green, and five other decorator hues. IBM also has (\$29.99) optional color PC covers in

"Mars red metallic, "Terra metallic" green, "Eclipse metallic" blue, "Lunar metallic" gray and "Polaris Blue." Dell Computer also introduced its new Inspiron laptops in "Tahoe Blue and Storm Gray.

■ **Several university research programs are seriously studying the technology required** to incorporate huge amounts of memory and several microprocessors on the same integrated circuit. This would greatly speed up execution times and drive down the cost. It would also make computers even more powerful than they are now.

■ **Symantec and Network Associates are working on anti-virus technology** that automatically updates all subscribers within 30 minutes over the Internet with virus recognition patterns whenever one of those computers encounters a new virus. The "Digital Immune System" and "Auto-Immune System" will be available early next year. The speed of the Internet, which viruses use to spread quickly, can now be used to get the cure out just as fast.

■ **To help prevent Carpal Tunnel Syndrome,** Key Tronic makes a special PC keyboard that lets typists use different amounts of force on certain groups of keys. Most generic keyboards have keys that all require the same amount of mechanical force, but Key Tronic's new ErgoForce keyboard requires less force from less-powerful fingers. Five touch levels are spread throughout the matrix of keys. This eases the burden on programmers over time.

INTERNET NEWS

■ **Macy parade to introduce Internet search engine.** "Jeeves" the Internet search engine butler at: <<http://www.askjeeves.com>>, will be featured in this year's Macy's Thanksgiving Day Parade in New York City. The balloon will feature a 16-foot Jeeves sitting among books representing topics that people can learn more about on the question answering service at Ask.com.

■ **Shrink-wrapped software moves towards Web-hosted applications.** Microsoft is quietly (and aggressively) working on an Internet version of their best-selling "Office" software. We heard that the web-based version will be rented or access sold outright over Microsoft's

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Central Business Web portal.

Eliminated will be disk-space hogging, installation, the need to update to new versions and costly packaging and distribution expense. "Office" accounts for \$5.5 billion in Microsoft sales and their challenge is to expand distribution without adversely impacting revenue. Internet Service Providers and other third-parties may be able to resell access to their version.

Grocery shopping without leaving your home is well under way. Priceline.com has formed another company called WebHouse Club to allow consumers to name the prices that they are willing to pay for groceries. The service, which uses Priceline's patented 'name-your-price' software, is set to be test marketed in New York, New Jersey and Connecticut.

Six hundred supermarkets have already been signed up in New York City for a November 1st rollout. Over 1,000 consumers are already on a special advance membership list being gathered at <http://www.Priceline.com>. (Click on "Coming soon, NY, NJ, CT.")

Customer's get a "yes" or "no" answer to their grocery price offer within 60 seconds! But they have to shop the online store in a predetermined manner. Savings are said to be up to 50%! The company is being financed by Paul Allen (one of Microsoft's founders.) The home grocery market is huge, about \$500 billion!

But WebHouse Club has competition! Amazon.com's HomeGrocer and Peapod are also attacking the brick-and-mortar neighborhood grocer. Internet grocers believe they can sell for less because expensive store-fronts, excess personnel and distribution costs are eliminated. (Check out: <http://www.homegrocer.com> and <http://www.peapod.com> and")

WebVan is still another online grocery service that delivers groceries within a 30 minute window! Like the milkman of by-gone years, the WebVan Delivery Service wants to make a delivery to every household every week of goods purchased over the Internet. They are building a coast-to-coast network of automated warehouses. WebVan, already operating in San Francisco (and a second warehouse is underway in Atlanta) is the brainchild of Louis Borders of the Borders bookstore chain. WebVan is starting with groceries and will expand to other product lines later. (<http://www.webvan.com>)

Sony is launching a new palm-sized (2.4 ounce) "Memory Stick

"Walkman" early next year that plays MP-3 music downloaded from the Internet.

The music is first loaded into a "Magic Gate Memory Stick." The music is transferred to the storage card from the web via a cable and adapter lashed to PC's running Windows 98.

An hours worth of music can be downloaded in three minutes. Success of the new player rests with record companies signing up for Sony's copyright protection system. Cost will be \$399.00.

The top five Web sites in terms of visitors are America Online, Yahoo, Microsoft, the Go Network and Lycos. Hurricane Floyd was good news for Weather.com, NOAA.gov and the Weatherunderground. They showed big gains as Floyd stormed ashore the eastern coast of the U.S. Weather.com, the Weather Channel's site, saw its traffic increase 150 percent to almost 1 billion visitors during the. NOAA.gov had 275,000 visitors, while Weather Underground served 123,000. (*This from an Internet rating service.*)

Online sellers are looking for a big holiday season. Research firm, Dataquest, Inc., predicts that October to December Internet buying will triple from last year's \$4.5 billion to \$12.2 billion. Dataquest said those months account for up to 40 percent of all e-commerce over the Web. Seventy percent of all sales are made by U.S. companies. The online market keeps expanding with nearly 60 million PC users now online.

Starting next year, airline passengers will be able to surf the Web and receive e-mail in flight. Through a partnership with BT (British Telecom) and various airlines worldwide, passengers will be able to reach Excite UK at no cost. Access (at 64 kbps) to the rest of the Web will be charged at a rate set by each airline. Each airliner will carry a server which will store the Excite UK Web pages.

Click the mouse and bet the house... An interesting article in the October 1999 issue of "Reason" says that "Online betting can't be stopped -- and Washington shouldn't bother trying." There are already estimates of up to 1,000 gambling sites on the Web, ranging from online casinos to sports betting sites to lotteries, tournaments, bingo games, and sweepstakes. The biggest objection to Net wagering comes from licensed, land-based gambling businesses who fear competition and governments who receive no taxes.

A bill going through Congress targets Internet service providers (ISPs) to stop online gambling which is likened to "ordering the U.S. Postal Service to search for and seize all correspondence related to illegal gambling." It can't work because the post office would object to the cost and futility of the task, while its customers would object to having their privacy violated." Nor could the postmen simply stop delivering mail to and from addresses associated with illegal gambling." Those involved would simply change their P.O. boxes periodically and send letters without return addresses."

Furthermore, American cops can do little to stop the explosion in legal gambling sites based in other countries. This growing number of overseas havens guarantees that, regardless of domestic policies, U.S. consumers will have access to Internet gambling. An economist predicts that within a couple of years 43 million Internet gamblers will generate \$2.3 billion in revenue.

WASHINGTON WHISPERS

Who would you guess made the following statement about the FCC? "They are engaged in shakedowns, extortions, and things that fall outside the formal regulatory process. The commission has been very effective in shaking down companies [and deciding] which communities get served first, which communities get served last, [and] who the assets get spun off to."

FCC Commissioner Harold W. Furchtgott-Roth, a 1997 Clinton appointee made that assessment of the FCC at a (September 26-28) Hudson Institute conference entitled "Defining the Digital Economy" in Jackson Hole, Wyoming. He is the sole economist among the agency's four other lawyers-turned-commissioners.

The Hudson Institute is an internationally recognized public policy research organization that forecasts trends and develops solutions for governments, businesses and the public.

Furchtgott-Roth also slammed the so-called "Gore tax," or e-rate fee that the FCC devised to wire schools and libraries to the Net.

"There we have a situation where the commission has invented a tax to fund programs at schools and libraries across America purportedly to bring broadband. At first blush this seems like a good thing."

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[But] "This is just preposterous. Most schools and libraries were hooked up to the Internet before a nickel of this multi-billion dollar tax was imposed on Americans. There's hardly a politician who's willing to stand up and say this is an incredible fraud,"

Born in Knoxville, TN, Commissioner Furchtgott-Roth holds degrees in Economics from the Massachusetts Institute of Technology and a Ph.D. in Economics from Stanford University

■ On September 15th, the FCC agreed to allow cell phone companies to distribute handsets equipped with scaled down global positioning satellite, or GPS, technology that pinpoints to within 15 feet the location from which a call is made.

Police and paramedics will be able to aid callers in distress faster by automatic tracking of 911 calls from cellular phones. The handset contains circuitry that transmits the location to orbiting satellites.

But not everyone is pleased. Privacy advocates say the technology can be used to track users without their consent. Users can avoid surveillance, however, by turning off the GPS function.

Developed by Lucent Technologies' Bell Labs, the technology will allow cellular network operators to easily meet a October 2001 FCC mandate requiring that all cell phones be able to locate 911 dialers. The technology will be available in the United States in the second half of 2000.

AMATEUR RADIO

■ The IARU Region 1 Conference at Lillehammer, Norway, ended on Friday, September 24th. ITU Region 1 encompasses Europe, Africa, the Middle East and some portions of Asia. The conference was hosted by Norway's *Norsk Radio Relae Liga* (NRRL).

A total of 40 member societies attended the conference. In addition 12 societies were represented by proxy making a total of 52 societies represented out of a total in Region 1 of 87.

In attendance at the meeting was the ITU's Director of the Radiocommunications Bureau, Robert Jones who is also licensed as VE3CTM. In his address he pointed out that non-business radio frequencies are being challenged by commercial interests and that the IARU must be vigilant.

Most of the work was accomplished in four working committees: the Finance Working Group, Administration Working Group, HF Working Group and the VHF/UHF Working Group. It was recognized that changes are needed to the way that Region 1 is financed and structured. Changes to the world-wide IARU constitution and election procedures were also discussed.

The HF Working Group discussed a re-worked version of Article S25 that defines the Amateur Radio Service in the Radio Regulations, and a so-called "M-XXX technical recommendation" that will cover the minimum requirements for administrations to grant amateur licenses.

A proposal of the British FASC (Future of the Amateur Radio Service Committee) to replace ITU S25.5 was well received and adopted by the conference members. S25.5 is the international regulation that requires Morse proficiency when Amateurs operate below 30 MHz.

The plan of IARU Region 1 is to abolish the mandatory CW exam for HF internationally, and leave it to national governments whether they want to have a Morse code examination or not.

That may not be exactly what the IARU Administrative Council had in mind. They are on record as favoring a version that specifies "A person seeking a license to operate an amateur station shall be required to demonstrate a knowledge of the topics specified in ITU-R Recommendation M-XXX."

The International Amateur Radio Union Administrative Council did prepare a draft recommendation defining the operational and technical qualifications needed to operate an Amateur Radio station which does not specifically mention a Morse code requirement. But its 11 categories include "operating skills."

The recommendation will form the basis of a submission to any ITU study group reviewing Article S25 at the next World Radiocommunication Conference.

■ We finally received a reply from the Radio Society of Great Britain (RSGB) concerning our international survey of Amateur Radio. Here is what they say about the state of Amateur Radio in the United Kingdom.

"The RSGB has very recently been involved in making many licensing changes, coupled with an overseas IARU [Region 1 Conference] meeting, all of which have taken the majority of my time."

"As of 31 March 1999, there were 58,926 total licensees in the UK. We have the following categories of amateur radio licenses: Novice B, Novice A, Full B, Full A/B and Full A."

"Both the Novice B and the Full B are multiple choice written examinations. The Morse requirement for a Novice A and Full A/B licence is a 5 wpm Morse test. For the Full A it is a 12 wpm Morse test."

"We have recently introduced a new license category, called Full A/B. This was in the main to allow Full B licensees (VHF) access to the HF bands by reducing the Morse requirement from 12 wpm to 5 wpm."

"The Society continues to give full support to the code as a mode of operation. However the Society does not support mandatory Morse testing for access to the bands below 30 MHz."

"The RSGB is hopeful that the introduction of the Full A/B licence and enhancements to the Novice licence will provide a more attractive path into Amateur Radio, at the same time as increasing facilities available to existing radio amateurs." [Submitted by Peter Kirby, G0TWW, General Manager, RSGB.] And here is a late response from Zambia (Africa.)

ZAMBIA -- "There are 45 radioamateurs in Zambia of which approximately fifteen are active. We have one 'full' license class. In the past, the license examination requirements were the same as the RSGB examination. At present, due to the absence of examiners, an applicant with appropriate educational qualifications and very good character references may be considered for a licence. It is a very long and bureaucratic process."

"The Morse code requirement is 12 wpm, but again no examiners are readily available. Indications are that the Morse requirement may be reduced or dropped altogether. As a Society (8 members) we are split between maintaining a requirement and dropping it altogether (20 percent for keeping it, 80 percent for dropping it.)"

"The Service is not growing in Zambia and we do not have any club stations. The cost of setting up and maintaining an Amateur Radio Station (even if they have electricity) is beyond the reach of a considerable number of the indigenous population. The active Amateurs are all in full time employment which limits the amount of time that anyone has to promote our hobby."

"Zambia is a big country (bigger than

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REPLY COMMENTS: LOW POWER BROADCASTING

LPFM has the backing of FCC Chairman Bill Kennard who contends that FM radio lacks diversity and as the broadcast industry consolidates, shuts out schools, churches and other small voices in the community.

This past January, the FCC voted 4 to 1 to give tentative approval to Kennard's plan to create thousands of three new classes of low-power FM radio stations, transmitting at 1 to 10 watts (Class LP-10), 100 watts (LP-100) and 1,000 watts (LP-1000) of power. The move reverses a 20-year old FCC ban, mandated by Congress, on the licensing of radio stations running under 1,000 watts.

The proceeding is now in the public "reply comment" period. Kennard's low-power FM proposal has drawn sharp criticism from commercial broadcasters, especially the National Association of Broadcasters (NAB), National Public Radio (NPR) and the Corporation for Public Broadcasting (CPB) who fear interference and competition.

Internet radio alternatives

The broadcast industry allege that Low Power Radio is not needed because "alternatives" – notably, Internet audio – are readily available. But reply comments filed by supporters of Micro and LPFM say that is not the case.

They argue that virtually all Americans have access to FM radio at home and in their car while only a small minority have access to a computer and Internet audio. Furthermore, Internet audio is not currently available to the millions who primarily listen to radio while driving.

They cite a big disparity in Internet access between lower income blacks and Hispanics on the Internet as compared with affluent Asians and Caucasians. "Any system which excludes 99.9% of the population from 100% of the publicly owned airwaves is discriminatory on its face." In short, LPFM supporters do not believe that the Internet audio "audience" is typical of American demographics.

Another argument by Low Power Radio activists is that a handful of corporations control almost all of the radio, television and newspaper publishing "slots." In some urban areas, one company owns all three media outlets.

Digital radio broadcasting

The NAB strongly supports the conversion of analog FM radio to digital and believes that LPFM puts that conversion in jeopardy. The transition system favored by most broadcasters is the "In Band On Channel" (IBOC) scheme which lets existing FM station owners broadcast in both digital and analog modes on their assigned frequency. Once digital radio receivers are in wide distribution, analog broadcasting would be discontinued. The FCC will be adopting a NPRM on digital radio on October 21. Reply comments close on LPFM fourteen days later.

The traditional broadcasting industry has taken the position that LP analog FM and digital IBOC radio broadcasting can not coexist. LPFM broadcasters disagree.

While Low power FM activists agree that the digitalization of radio is inevitable, they are willing to make "reasonable accommodations" for it. But they do not want to be totally shut out of low power community broadcasting.

Most of America's LPFM advocates see the "digitalization of radio as a costly attempt to fix a content problem with technology." Adding, "Better program content -- including more variety in programming, more local coverage and fewer advertisements would be a far more effective approach for reviving the sagging levels of listenership."

Conflicts with public radio

National Public Radio and the Corporation for Public Broadcasting worry that public radio stations might be displaced from the radio dial. The low power radio movement doubts that there would be wholesale "bumping." But they question "Why shouldn't Public Radio's translator stations, or at least its satellator stations, face the risk of displacement by local stations?" Translators and satellators rebroadcast radio and satellite signals to fringe areas.

They add, "Should public radio satellators be protected from local competition simply because they are subsidized? ... NPR may call such stations 'affiliates,' but real affiliates would have a local staff, a meaningful measure of local programming and operational autonomy."

"While NPR and CPB public radio has a mission that is unique and extremely valuable to the larger society; the same can be said of low power radio. ... Public Radio is funded by the public but it is not run by the public. It is run by the Federal Government."

NAB's allegations of interference

Low power radio devotees question the accuracy of the NAB's interference study. While the research did not find any serious risk of interference with car radios, it did say there was a significant interference risk in some metropolitan areas.

Recent studies conducted by the Media Access Project (MAP), the Committee for Democratic Communications of the National Lawyer's Guild (CD), and the Micro-Empowerment Coalition (MEC), however, found exactly the opposite. Even the FCC's own findings contradicts the NAB interference study.

Micro-power advocates also point out that NAB's findings are contradicted by "real world" experience. "Unlicensed broadcasters – many of them located in urban areas – have been transmitting with unregulated equipment for decades. Recent 'busts' of unlicensed broadcasters have not been based on complaints of interference. They have been based instead on a policy of enforcing 'the letter of the law'..."

Also pointed out was that NAB's interference study covered 60 different metropolitan areas. LPFM advocates point out that there are 323 Standard Metropolitan Areas (SMAs) and "...that nine-tenths of the iceberg remains unseen."